

Placenta accreta and anesthesia: A multidisciplinary approach

ABSTRACT

Placenta accreta (an abnormally adherent placenta) is one of the two leading causes of peripartum hemorrhage and the most common indication for peripartum hysterectomy. Placenta accreta may be associated with significant maternal hemorrhage at delivery owing to the incomplete placental separation. When placenta accreta is diagnosed before delivery, a multidisciplinary approach may improve patient outcome.

Key words: Anesthesia; hemorrhage; placenta accreta

Introduction

Normally, the placenta adheres to the decidua basalis layer, allowing for a smooth separation of the placenta from the uterine wall after delivery. In patients with abnormal placentation, the placenta has invaded past the decidua basalis layer. The incidence of placenta accreta among deliveries is low (0.04%). However, it accounts for up to 50% of all caesarean hysterectomies most of which are unplanned. Placenta accreta (an abnormally adherent placenta) is one of the two leading causes of peripartum hemorrhage and the most common indication for peripartum hysterectomy.^[1] This has anesthetic implications because it is necessary to prepare for the potential danger of major hemorrhage. Anesthesia management of the hemorrhage consisted of blood and fluid replacement, guided by an assessment of the amount of blood loss along with heart rate, urine output, and systemic blood pressure. General anesthesia is preferred due to the longer operating times, massive hemorrhage and need for an extension of surgery including iliac vessel exposure. A multidisciplinary approach

may improve patient outcome. We report a case placenta accreta with planned hysterectomy using multidisciplinary approach resulting in decrease morbidity and mortality.

Case Report

A 35-year-old female, weighing 70 kg, gravida six presented for an elective cesarean section. Her past obstetric history included five previous cesarean sections for cephalo-pelvic disproportion and expected lengthy procedures under general anesthesia uneventfully. There was no significant past medical or surgical history. All routine laboratory results were in normal range except hemoglobin that was 9 g/dl. Ultrasonography of abdomen showed placenta accreta. Hence, elective cesarean section with consented hysterectomy, under general anesthesia was planned. In view of expected massive blood loss, adequate packed red blood cells (PRBCs) and blood products were available in the operation theater. The patient was on the operating theater table with a wedge under the right hip. Standard monitors (electrocardiogram,

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noninvasive blood pressure, and pulse oxymeter) were applied. Her baseline vitals were within normal limits. After 5 min of preoxygenation, induction of anesthesia was done with intravenous (IV) propofol 150 mg. Tracheal intubation was facilitated by IV suxamethonium 100 mg and with cricoid pressure. Anesthesia was maintained with oxygen and air (50%), sevoflurane (1.0-1.5%) and IV cisatracurium 12 mg.

Two peripheral IV lines (16 gauge and 18 gauge) were secured. A 20 gauge arterial cannula placed in the left radial artery and ultrasound guided 7.5 Fr triple lumen central venous catheter placed in a right internal jugular vein. Prior to cesarean section urologists did a cystoscopy to rule out intra-vesical invasion of the placenta and inserted bilateral ureteric stents to avoid ureteric injury and identification during hysterectomy and Foley's catheter inserted. A healthy female baby of 2.1 kg with normal Apgar score was delivered. Thereafter, carbetocin (pabal) 100 µg IV and oxytocin IV infusion (30 units in 500 ml Ringer's lactate) were started. Placenta left in the uterus and hysterotomy wound sutured to avoid partial placental delivery inducing hemorrhage. Both uterine arteries clamped and hysterectomy done. During surgery, blood loss was almost 1 L. Intraoperative heart rate and blood pressure remained stable, and hemoglobin dropped to 8 g/dl that was replaced with two units of PRBCs. The procedure lasted for 2 h and she received total 2500 ml IV fluid including Ringer's lactate and PRBCs with urine output of 100 ml/h. At the end of surgery, neuro-muscular block was reversed with glycopyrrolate 0.4 mg IV and neostigmine sulfate 2.5 mg IV. In immediate postoperative period, patient was conscious, cooperative, with adequate muscle tone and power. Her vitals were stable. In the postoperative room, she was supplemented with face mask and 1 unit of PRBCs was infused. Postoperative pain managed by patient controlled analgesia. She had an uneventful in the postoperative course.

Discussion

There are varying degrees of abnormal placentation. Placenta accreta vera occurs when the placenta adheres to the myometrium. Placental invasion into the myometrium is termed placenta increta. Placenta percreta involves invasion of the placenta through the myometrium to the uterine serosa and may include invasion into other pelvic organs. A scar from a previous cesarean delivery or other uterine surgeries, pelvic radiation,^[2,3] or localization of the placenta in an area deficient of decidua around the cervical os (placenta previa)^[4] may allow for abnormal decidualization. However, many cases of placenta accrete occur in the absence of a decidualization defect.^[5] In such cases, the abnormal placentation may be due to excessive invasion of the trophoblast.

The incidence of placenta accreta has increased steadily during the past several decades — Most likely secondary to the rising rate of cesarean deliveries — and currently occurs at a rate of 1:500 deliveries.^[6] Placenta previa, especially with a history of cesarean delivery, is a major risk factor for placenta accrete.^[7] The rate of cesarean delivery in the United States has risen by 53% from 1996 to 2007. As of 2007, one-third of all deliveries in the United States was by cesarean, with Louisiana having the third highest cesarean delivery rate in the country.^[8] The incidence of abnormal placentation in patients with a placenta previa increases from 3% with no history of cesarean delivery to >60% in patients with more than 2 prior cesarean deliveries. As the incidence of cesarean delivery rises, so will cases of abnormal placentation.^[9] However, it is important to remember that abnormal placentation can occur even in patients without a prior history of cesarean delivery. Multiparity, advanced maternal age, previous dilation and curettage, hypertensive disorders, and tobacco use are also risk factors for accreta in patients with a placenta previa.^[10]

Patients with placenta accreta usually require a hysterectomy. As diagnosis cannot be established definitively with ultrasound, diagnosis can be made only at surgery. When placenta accreta is diagnosed antenatally, generally the placenta is left attached while hysterectomy is performed.^[11] In our hospital, we have assembled an obstetric hemorrhage team that consists of a maternal fetal medicine specialist, obstetrician, anesthesiologist, intensivist, and neonatologist. After initial case review, an interventional radiologist, urologist, and a blood bank physician are consulted if deemed necessary. In our case by use of multi-disciplinary team approach and pre-operative preparations, we decrease the patient morbidity, and mortality and patient's outcome was good.

Conclusion

Patients with placenta accreta are at risk for significant hemorrhage at delivery. The key to a successful outcome in these cases is a multidisciplinary approach, appropriate communication, and early planning. Favorable maternal and fetal outcomes have resulted from this team-based approach.

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Conflicts of interest

There are no conflicts of interest.

References

1. Wright JD, Devine P, Shah M, Gaddipati S, Lewin SN, Simpson LL, *et al.* Morbidity and mortality of peripartum hysterectomy. *Obstet Gynecol* 2010;115:1187-93.
2. Norwitz ER, Stern HM, Grier H, Lee-Parritz A. Placenta percreta and uterine rupture associated with prior whole body radiation therapy. *Obstet Gynecol* 2001;98:929-31.
3. Pridjian G, Rich NE, Montag AG. Pregnancy hemoperitoneum and placenta percreta in a patient with previous pelvic irradiation and ovarian failure. *Am J Obstet Gynecol* 1990;162:1205-6.
4. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, *et al.* Maternal morbidity associated with multiple repeat cesarean deliveries. *Obstet Gynecol* 2006;107:1226-32.
5. Khong TY, Robertson WB. Placenta creta and placenta praevia creta. *Placenta* 1987;8:399-409.
6. Wu S, Kocherginsky M, Hibbard JU. Abnormal placentation: Twenty-year analysis. *Am J Obstet Gynecol* 2005;192:1458-61.
7. Hung TH, Shau WY, Hsieh CC, Chiu TH, Hsu JJ, Hsieh TT. Risk factors for placenta accreta. *Obstet Gynecol* 1999;93:545-50.
8. Menacker F, Hamilton BE. Recent trends in cesarean delivery in the United States. *NCHS Data Brief* 2010;35:1-8.
9. Usta IM, Hobeika EM, Musa AA, Gabriel GE, Nassar AH. Placenta previa-accreta: Risk factors and complications. *Am J Obstet Gynecol* 2005;193:1045-9.
10. Oyelese Y, Smulian JC. Placenta previa, placenta accreta, and vasa previa. *Obstet Gynecol* 2006;107:927-41.
11. Miller DA, Chollet JA, Goodwin TM. Clinical risk factors for placenta previa-placenta accreta. *Am J Obstet Gynecol* 1997;177:210-4.

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